

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/05300

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G02F 1/136, 1/1335; H01L 29/04

US CL : 349/41, 42, 48, 61, 96, 114; 257/59, 72

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 349/41, 42, 48, 61, 96, 114; 257/59, 72

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONEElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)
USPTO APS EAST, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	US 2001/0046013 A1 (NORITAKE et al) 29 November 2001 (29.11.2001), page 2, paragraph 0032-0035; Figure 3.	27-29 ----- 30-35, 43-45, 82-102, 110-119
A	US 2001/0046013 A1 (NORITAKE et al) 29 November 2001 (29.11.2001), the entire document.	1-26, 36-42, 46-81, 103-109, 120-128, second 128, 130-177
X — Y	US 5,568,292 A (KIM) 22 October 1996 (22.10.1996), the entire document, especially Figure 5.	10, 11, 16, 18, 23 ----- 1-6, 9, 12-15, 17, 19- 22, 24, 25, 38, 39, 42, 141-146

☒ Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:

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- "E" earlier application or patent published on or after the international filing date
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- "O" document referring to an oral disclosure, use, exhibition or other means
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later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

*X

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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*A

document member of the same patent family

Date of the actual completion of the international search

31 May 2003 (31.05.2003)

Date of mailing of the international search report

16 JUN 2003

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Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P --- A,P	US 2002/0126240 A1 (SEIKI et al) 12 September 2002 (12.09.2002), page 1, paragraph 0010; Figure 2B.	3-6, 12-15, 19-22, 24-26, 30-35, 42-45, 82-102, 110-119, 141-146 ----- 1, 2, 7-11, 16-18, 23, 27-29, 36-38, 40, 41, 46-81, 103-109, 120- 140, 147-128, second 128, 130-177
Y --- A	US 5,990,988 A (HANIHARA et al) 23 November 1999 (23.11.1999), column 3, lines 52-60; column 4, lines 1-4.	39 ----- 1-38, 40-128, second 128, 130-177
A,P	US 6,380,995 B1 (KIM) 30 April 2002 (30.04.2002), the entire document.	1-128, second 128, 130-177
Y --- A	US 6,295,113 B1 (YANG) 25 September 2001 (25.09.2001), column 6, lines 3-6; Figure 2.	1-6, 9, 17, 26 ----- 7, 8, 10-16, 25, 27- 128, second 128, 130-177